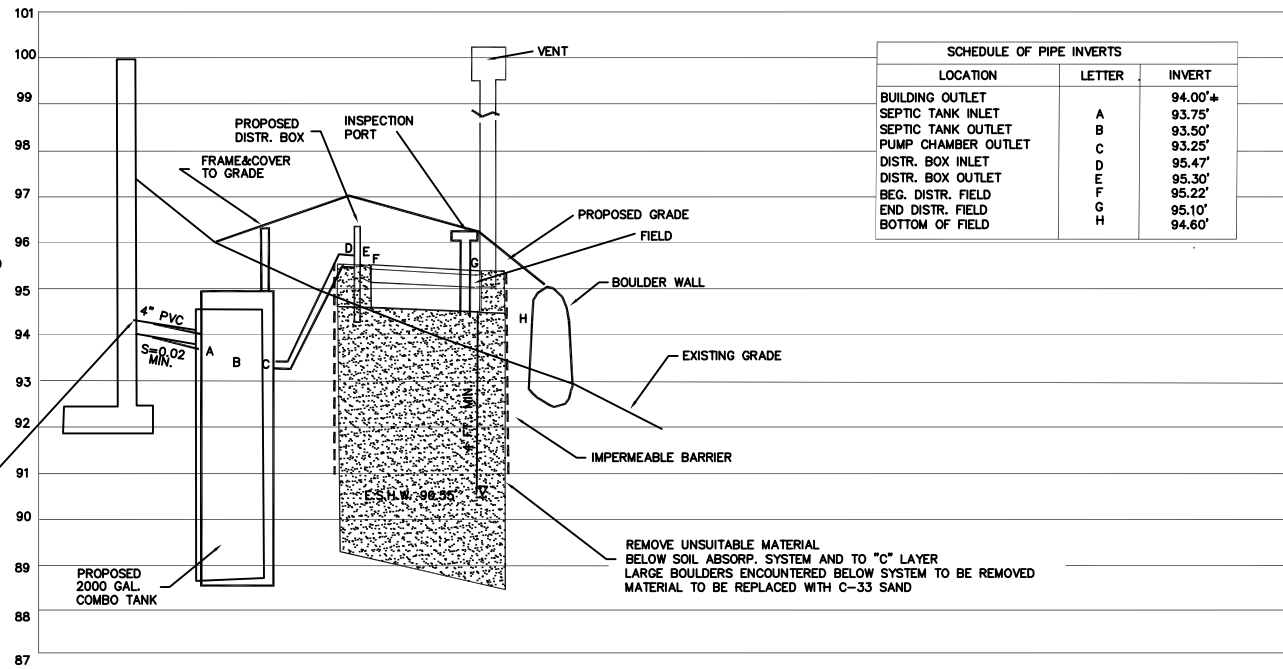
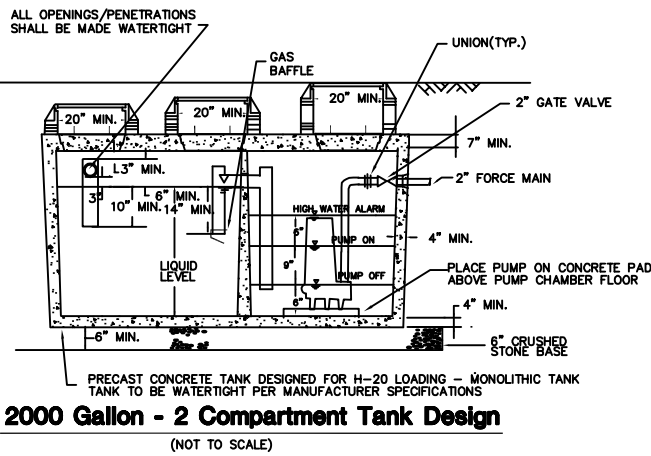
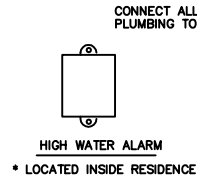




Liberty Pump Model LE51(OR SIMILAR)

- 1/2 H.P., 115V, Single Phase
- 2" Solids Handling
- Mechanical Float Switches
- Install high water alarm inside dwelling on separate circuit other than pump, include red light, buzzer

Dosing Frequency : 4 Doses Per Day
Dose : 55 gal. + 5 gal. flowback = 60 gal.
Pump Chamber Capacity :
Chamber Capacity : 2'-10"x5'-10"x1"x7.48 gal.
= 10.24 g/inch depth(Approx)
Pump Controls :
Pump On/Off : 60 gal./10.24 gal./inch. = 6' in.
Emergency Storage Requirements:
220 gal./10.24 gal./in. = 21.5 in. req.
Aval Storage = 4'-3"(tank) - 12"(working level)
= 39" > 21.5" req. ok



SCALE : HOR. 1"=20'
VERT. 1"=2'

TP-1 		
GRND. ELEV.	SOIL TYPE	FROM SURF.
		94.25'
0-36"	FILL	91.25'
36"-60"	Apb-FSL 10YR2/1	89.25'
64"-110"	C-LS 5Y7/2	85.08'

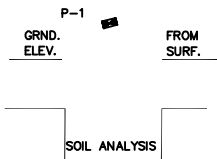
GROUNDWATER OBSERVED @ 72"
EST. SEAS. HIGH WATER 60"(89.25')

TP-2 		
GRND. ELEV.	SOIL TYPE	FROM SURF.
		94.55'
0-60"	FILL	89.55'
60"-72"	App-FSL 10YR2/1	88.55'
72"-120"	C-LS 5Y7/2	85.08'

GROUNDWATER OBSERVED @ 60"
EST. SEAS. HIGH WATER 48'(90.55')

TP-3 		
GRND. ELEV.	SOIL TYPE	FROM SURF.
		93.35'
0-48"	FILL	89.35'
48"-60"	Bw-FSL 10YR5/8	88.35'
60"-110"	C-SL 2.5Y6/4	84.18'

GROUNDWATER OBSERVED @ 100"
EST. SEAS. HIGH WATER 48"(89.35')



WITNESSED BY: MARK TOMLAN
BOARD OF HEALTH
CITY OF HAVERHILL
JULY 28, 2026

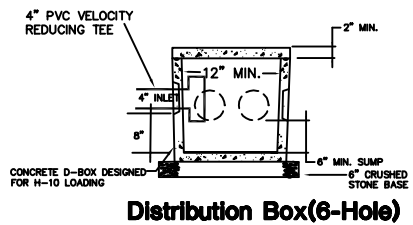
1. ALL UNSUITABLE MATERIAL MUST BE REMOVED FROM THE PROPOSED CONSTRUCTION AREA BELOW THE SOIL ABSORPTION SYSTEM BACKFILL. MATERIAL SHALL CONSIST OF CLEAN SAND OR GRAVEL FREE OF FINES AND HAVING A PERCOLATION RATE OF 2 MIN. PER INCH OR LESS AFTER BEING PLACED AND COMPACTED.
2. INSTALLER ADVISED TO CONTACT DISGASE PRIOR TO CONSTRUCTION.
3. HEAVY MACHINERY SHALL NOT BE PERMITTED TO PASS OVER ANY PART OF THE PROPOSED SUBSURFACE DISPOSAL SYSTEM.
4. SYSTEM PIPING SHALL CONSIST OF POLYVINYL CHLORIDE PIPE(PVC) SCHEDULE 40 NSF OR SDR35, UNLESS OTHERWISE NOTED.
5. GARBAGE GRINDER/DISPOSAL OR WATER PURIFIER SYSTEM IS NOT TO BE CONNECTED TO THE SUBSURFACE DISPOSAL SYSTEM.
6. SITE SURVEY WAS SOLELY PERFORMED TO OBTAIN SITE TOPOGRAPHY FOR THE INSTALLATION OF A SUBSURFACE DISPOSAL SYSTEM. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE REPRESENTATION OF ANY PROPERTY LINES OR BUILDING LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROLS.
7. ALL DISTURBED AREAS SHALL BE LOAMED, SEEDED AND MAINTAINED TO PREVENT EROSION. ANY DISTURBED PAVING MUST BE REPLACED IN-KIND.
8. THE DESIGNER HAS NOT BEEN RETAINED BY THE CLIENT TO CONSTRUCT OR SUPERVISE THE CONSTRUCTION OF THE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS FOR INSPECTION OF THE INSTALLATION OF THE SYSTEM WITH THE LOCAL BOARD OF HEALTH.
9. ALL SURFACE AND SUBSURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE SUBSURFACE DISPOSAL SYSTEM AND FOUNDATIONS.
10. ALL SYSTEM TANKS AND PIPING CONNECTIONS SHALL BE MADE WATERTIGHT THROUGHOUT MANUFACTURERS SPECIFICATIONS WITHOUT WARRANTY.
11. PROPER MAINTENANCE AND PERFORMANCE OF THE SUBSURFACE DISPOSAL SYSTEM SHOULD CONSIST OF INSPECTING THE SEPTIC TANK AT LEAST ONCE A YEAR AND WHEN THE TOTAL DEPTH OF SCUM AND SOLIDS EXCEEDS 1/3 THE LIQUID DEPTH OF THE TANK, THE TANK SHOULD BE PUMPED.
12. COMPONENTS NOT TO BE BACKFILLED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED BY BOARD OF HEALTH.
13. SEWER LINES WHICH ARE LESS THAN 1/16 BENDS INSTALLED SHALL ALSO HAVE CLEANOUTS INSTALLED IN AN ACCESSIBLE LOCATION.
14. NO KNOWN WELLS EXIST WITHIN 100 FT. OF THE PROPOSED SYSTEM.
15. THERE ARE NO PUBLIC WATER SUPPLIES WITHIN 400 FT. OF PROPOSED SYSTEM.
16. THERE ARE NO TRIBUTARIES TO PUBLIC WATER SUPPLIES WITHIN 200 FT. OF PROPOSED SYSTEM.
17. THE PROPOSED SYSTEM DOES NOT LIE WITHIN A NITROGEN SENSITIVE AREA.
18. ENGINEER TO PROVIDE PERMANENT BENCHMARK ON AS-BUILT DRAWING.
19. CONTRACTOR TO PROVIDE SIEVE ANALYSIS OF SAND INSTALLED WITHIN SYSTEM.

LOCAL UPGRADE REQUEST:
UNDER SECTION 15.405(1) OF MDEP REGULATION 310 CMR 15.00

- A REQUEST IS ASKED FOR A VARIANCE FOR A REDUCTION OF THE SAS FROM THE BORDEREING VEGETATED WETLANDS FROM 50 FT. TO 20 FT.
- A REQUEST IS ASKED FOR A VARIANCE TO OBTAIN SOIL ANALYSIS

Existing 2 Bedroom Dwelling
Design Flow : 2 Bedrooms @ 110 gpd = 220 gpd

LTAR = 0.66 gpd/sq.ft.
 Design of Soil Absorption System : Field
 Effective Width = 15 Feet
 Effective Depth = 6 inches
 Bottom Capacity = 15 sq.ft./ft. x 0.66 gpd/sq.ft. = 9.9 gpd/ft.
 Overall Capacity = 9.9 gpd/ft.
 220 gpd / 9.9 gpd/ft. = 22.22 ft. of Field Needed(333 s.f.)
 DESIGN FIELD 15 FT. X 23 FT. = 345 S.F.

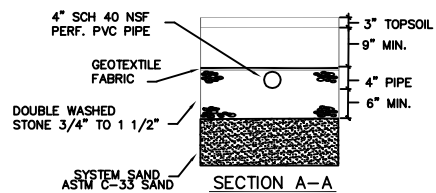
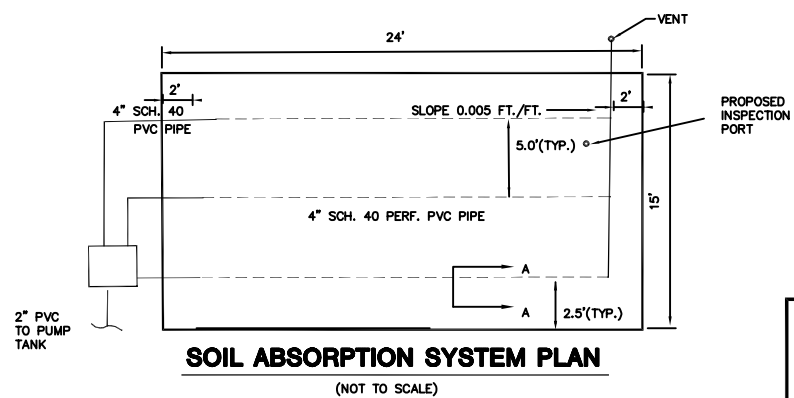


 EXISTING CONTOUR
 PROPERTY LINE
 TREE LINE/WOODED AREA
 TREE
 ROCK/BOULDER
 SPOT GRADE
 PROPOSED CONTOUR
 TEST PIT LOC.
 PERC. TEST LOC.
 B.V.W. DELINEATION LINE
 PROPOSED HAY WATTLÉS
 100' BUFFER ZONE LINE
 RETAINING WALL
 SHRUBS/PLANTS
 STONE WALL
 FENCE

NOTES:

- GRADE SURFACE DRAINAGE
AWAY FROM HOUSE AND SEPTIC SYSTEM
- CONTRACTOR SHALL VERIFY AND INCORPORATE
ALL INTERIOR PLUMBING WORK NECESSARY TO
CONNECT TO PROPOSED SYSTEM
- NO PLANTINGS WITHIN 5 FT. OF SYSTEM

THIS PLAN WAS PREPARED FOR THE SOLE PURPOSE
OF THE ABOVE WORK AND FOR THE NOTED PERSON/FIRM.
THE INFORMATION CONTAINED WITHIN THIS PLAN MAY NOT BE
USED FOR OTHER PURPOSES WITHOUT THE WRITTEN CONSENT
OF THE DESIGN ENGINEER.



SOIL EVALUATOR STATEMENT :
I(JAMES M. KAVANAUGH) CERTIFY THAT ON JULY 26,1995 I HAVE PASSED THE EXAMINATION APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE ABOVE ANALYSIS HAS BEEN PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE AND EXPERIENCE DESCRIBED IN 310 CMR 15.018(2).

James M. Kavanaugh, P.E.
Environmental Consultant

**14 Shady Hill Drive
N. Reading Mass. 01864**

Tel.(978)664-2925

DESIGN OF SUBSURFACE DISPOSAL SYSTEM
PREPARED FOR

Robert Tucker
1416 Broadway
Haverhill, Ma 01832

Map No. 590
Parcel No. 441-12A



Proj. No. 26057	Desn. By: JMK	
Date: September 8, 2026	Drn. By: DMC	
Scale : As Noted	Sheet 1 of 1	